

## New information on lycaenid butterflies from the South-East Asian Islands

Alan C. CASSIDY

18 Woodhurst Road, Maidenhead, Berkshire SL6 8TF, England; e-mail: ACCassidy@aol.com

**Abstract** New distributional information is given for eleven taxa of Indo-Australian Lycaenidae, including descriptions of three new species, *Hypochrysops pyrodes*, *Paraduba mastrigti*, and *Monodontides chapmani*, and five new subspecies. The male of *Tajuria discalis floresica* Murayama, from Flores, is described for the first time.

**Key words** Lepidoptera, Lycaenidae, *Hypochrysops pyrodes*, *Philiris ziska halmaheira*, *Philiris intensa ilioides*, *Tajuria discalis floresica*, *Paraduba mastrigti*, *Paraduba metriodes transvestita*, *Jamides seminiger vanlithi*, *Monodontides chapmani*, *Logania marmorata*, *Allotinus macassarensis*, *Udara serangana*, *Famegana alsulus*.

### Introduction

With one exception, the specimens described in this paper all are part of the collection of the Zoological Museum of the University of Amsterdam. Several form part of the Van Groenendael collection, while others were acquired from diverse sources. They represent several subfamilies of the Lycaenidae *sensu* Eliot (1973), whose higher classification of the family is followed in this account.

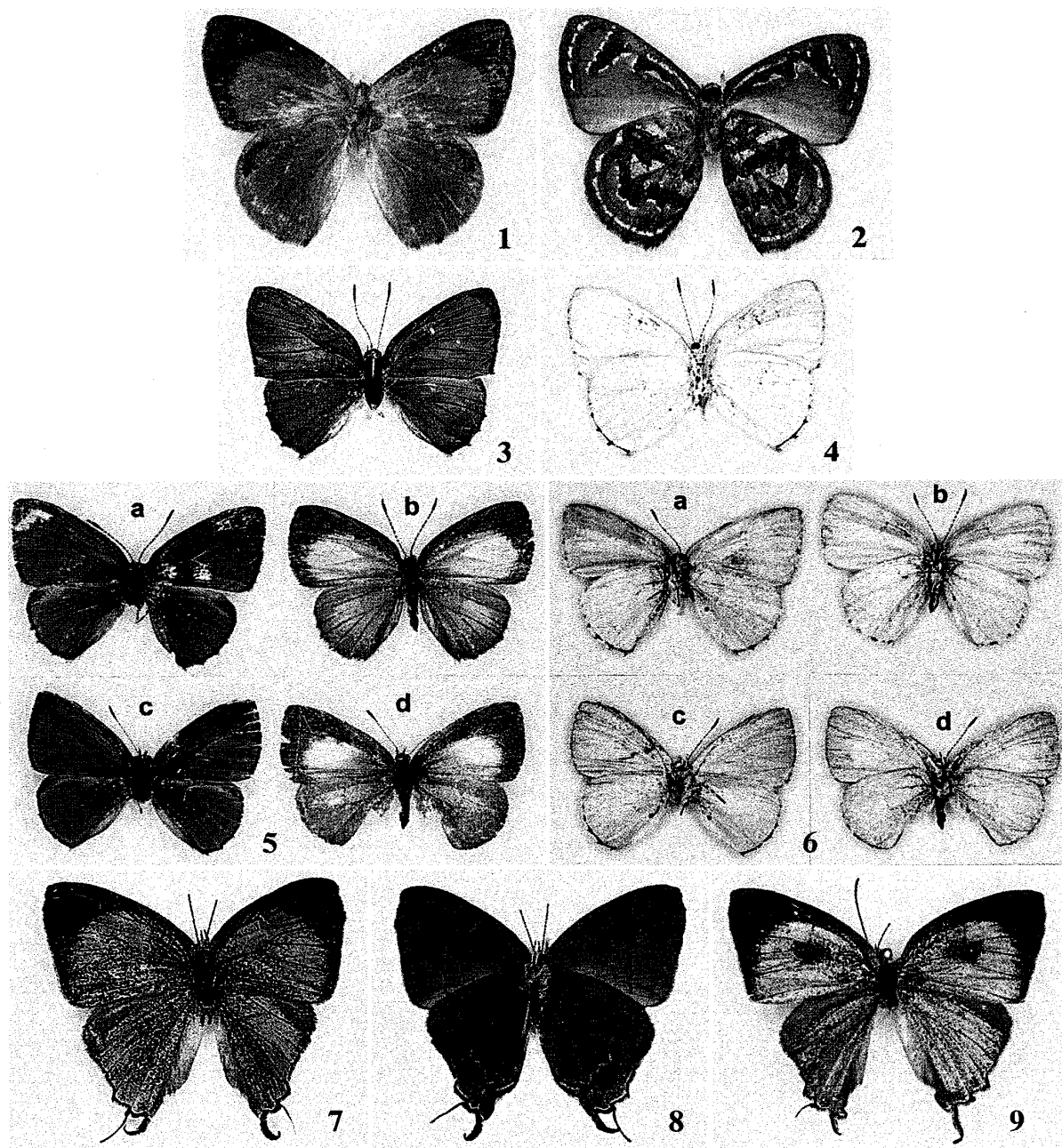
The new taxa described here are from locations in the area from Sulawesi to New Guinea and in several cases represent extremes of the distribution of the species or genera concerned, westward in the case of some New Guinea species and eastwards in respect of some normally more associated with the islands bordering the South China Sea. All type specimens are located in the Zoological Museum of the University of Amsterdam, unless otherwise noted.

***Hypochrysops pyrodes* sp. n.** (Figs 1–2: ♂; Fig. 20: ♂ genitalia)

Holotype ♂, labelled *Hypochrysops*, 15/5, Sg Tanggari, 600 m, P Zondervan; *Hypochrysops pyrodes* Tox ♂, Det Tox 1940 TYPE; TYPE *pyrodes* Cassidy.

Male upperside forewing orange-brown with dark chocolate brown post-discal markings. Apical border broader and more curved than in *H. coelisparus* (Butler), but reducing to 1.5 mm at dorsal end of termen, then extending along the dorsum for 3 mm. Upperside hindwing dark markings very reduced, comprising a short band in spaces 6 and 7 together with small brown spots at the very ends of veins 1b, 2 and 3.

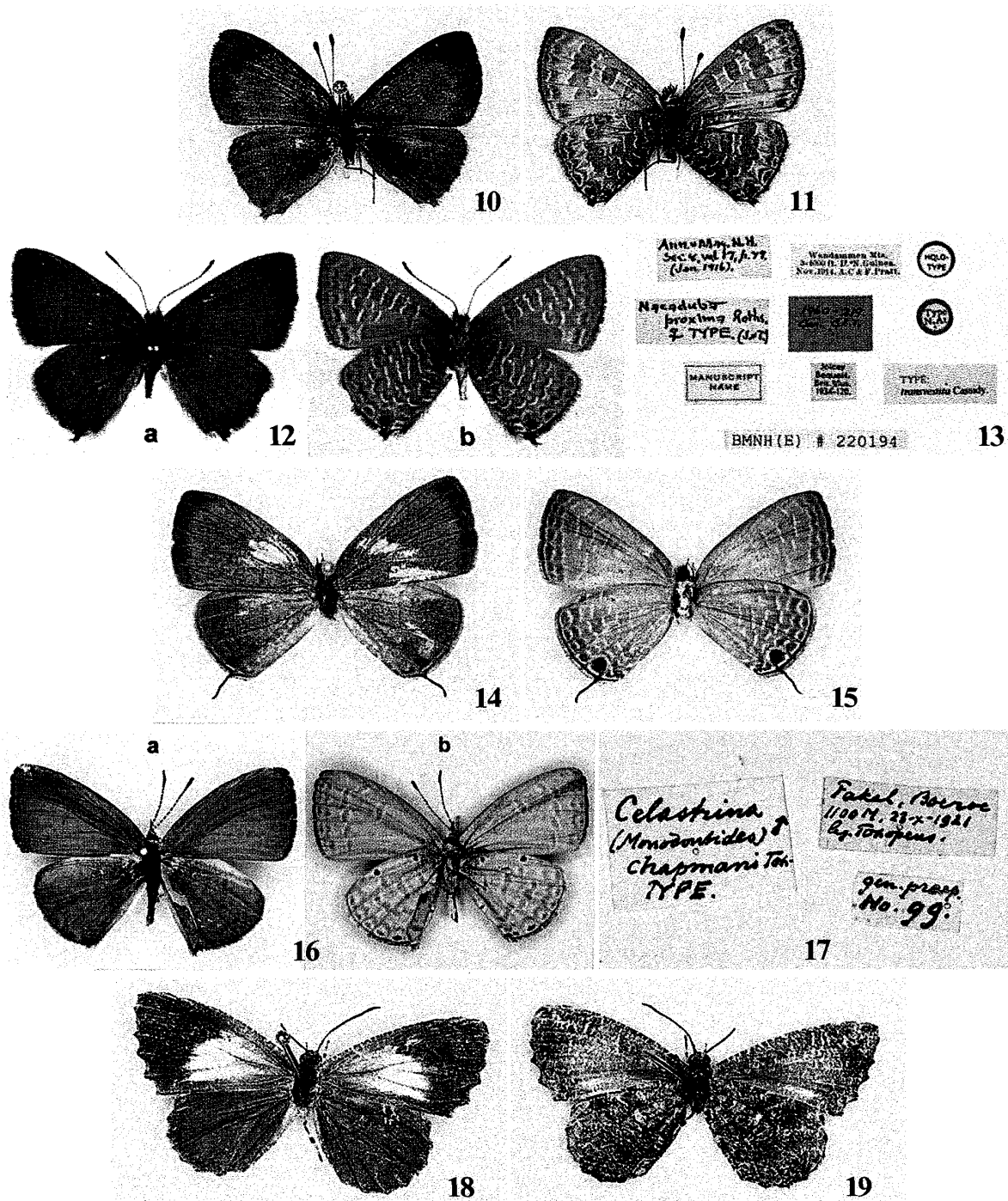
Underside a golden ochreous brown with darker discal banding in the usual pattern, but significantly darker than *coelisparus* or *H. c. kerri* Riley. The pale green metallic striae edging the dark pattern prolific and the submarginal metallic band almost continuous from dorsum to vein 5, then with separate spots in spaces 6 and 7. Underside forewing marginal metallic band continuous from vein 2 to the apex. The post-discal dark band expanding from space 3 to 3 mm width at vein 6.



Figs 1-9. Some lycaenids from the SE Asian Island. 1. *Hypochrysops pyrodes* sp. n., ♂, upperside. 2. *Ditto*, underside. 3. *Philiris ziska halmaheira* ssp. n., ♂. 4. *Ditto*, underside. 5a. *Philiris ilias* Felder, ♂, Mt Mada. 5b. *Ditto*, ♀, Mt Mada. 5c. *Philiris intensa ilioides* ssp. n., holotype ♂, Station 9. 5d. *Ditto*, paratype ♀, Station 9. 6. Underside of Fig. 5. 7. *Tajuria discalis floresica* Murayama, ♂, Flores Is. 8. *Ditto*, underside. 9. *Ditto*, ♂, Flores Is.

Male genitalia conform generally to *coelisparus* (Sands, 1986, fig. 11), but with a more pronounced interior point on the socii, and the valvae slightly flatter on the distal edge.

This specimen was known to Toxopeus, and he had given it the name *pyrodes* but it was never published. The type location is the village of Tanggari, approximately 20 km South East of Manado in Northern Sulawesi.



Figs 10-19. Some lycaenids from the SE Asian Island. 10. *Paraduba mastrigti* sp. n., ♂. 11. *Ditto*, underside. 12a. *Paraduba metriodes transvestita* ssp. n., ♂. 12b. *Ditto*, underside. 13. *Ditto*, labels. 14. *Jamides seminiger vanlithi* ssp. n., ♂. 15. *Ditto*, underside. 16a. *Monodontides chapmani* sp. n., holotype ♂, Buru, Fakal. 16b. *Ditto*, underside. 17. *Ditto*, labels by Toxopeus. 18. *Logania marmorata* Moore, 1884, ♂, Sangir-Eiland. 19. *Ditto*, underside.

***Philiris ziska halmaheira* ssp. n.** (Figs 3-4: ♂; Fig. 21: ♂ genitalia)

Holotype ♂, labelled NED. INDIE. HALMAHEIRA; 10/12 xii 1928; leg v. d. Berg. Coll L. J. Toxopeus, acq. 1951; TYPE *halmaheira* Cassidy.

Upperside colouring as typical *ziska* (Grose-Smith) from New Guinea. Underneath distinguished by the anterior half of each wing being creamy-white with noticeable pale banding in the normal Lycaenine pattern. Genitalia the sociuncus well produced and cleft as in *ziska* and *P. azula* Wind & Clench, but overall looking more like the former but with the sociuncus lobes apically more acute. Valvae with a single point and subapically more excavate on the interior edge than in *ziska*. The comparisons made here are based on the drawings of Tite (1963).

Parsons (1999) listed 3 species of *Philiris* known from the Moluccas. Of these, two replaced similar species from New Guinea and might be conspecific with them. This new subspecies is clearly very closely related to *P. ziska* and *P. azula* which, together with *P. melanacra* Tite, were treated as a species group by Sands (1981). Of these three, *ziska* has the furthest known distribution to the West, with ssp. *P. z. pratti* (Bethune-Baker) located in Fak-Fak at the

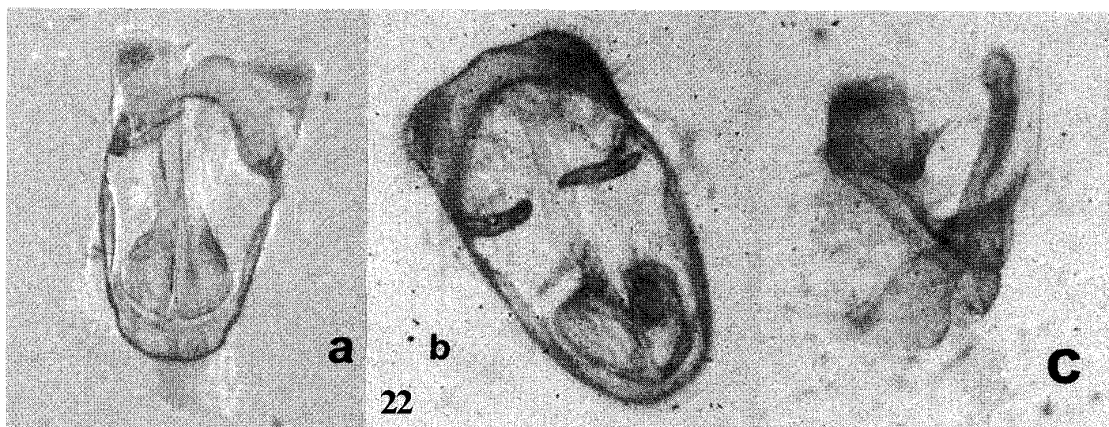
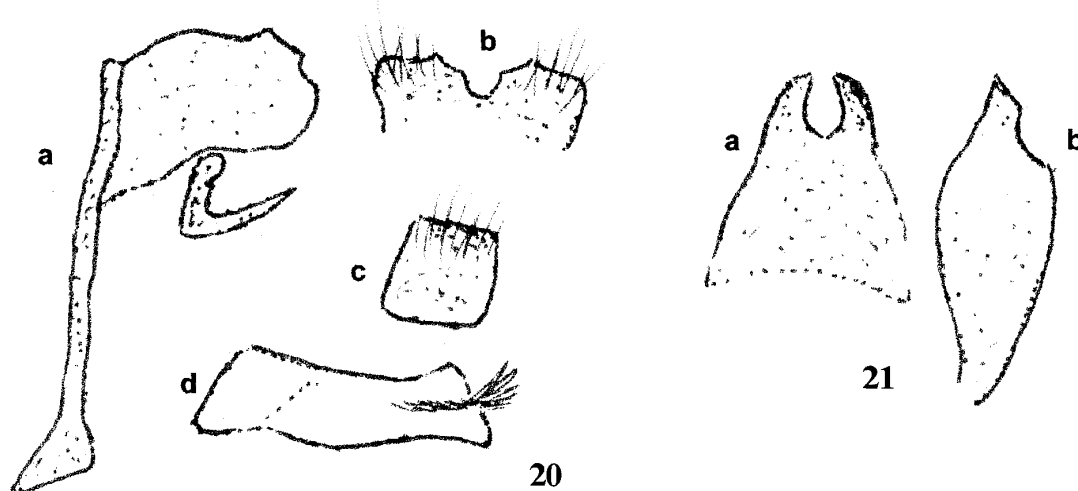


Fig. 20. Male genitalia of *Hypochrysops pyrodes* sp. n. (a: lateral view, b: sociuncus, c: valva, d: aedeagus).

Figs 21-22. Male genitalia of *Philiris* spp. 21. *P. ziska halmaheira* ssp. n. (a: sociuncus, b: valva). 22a. *P. ilias* Felder, Buru, Mt Mada. 22b, 22c. *P. intense ilioides* ssp. n., Buru, Station 9.

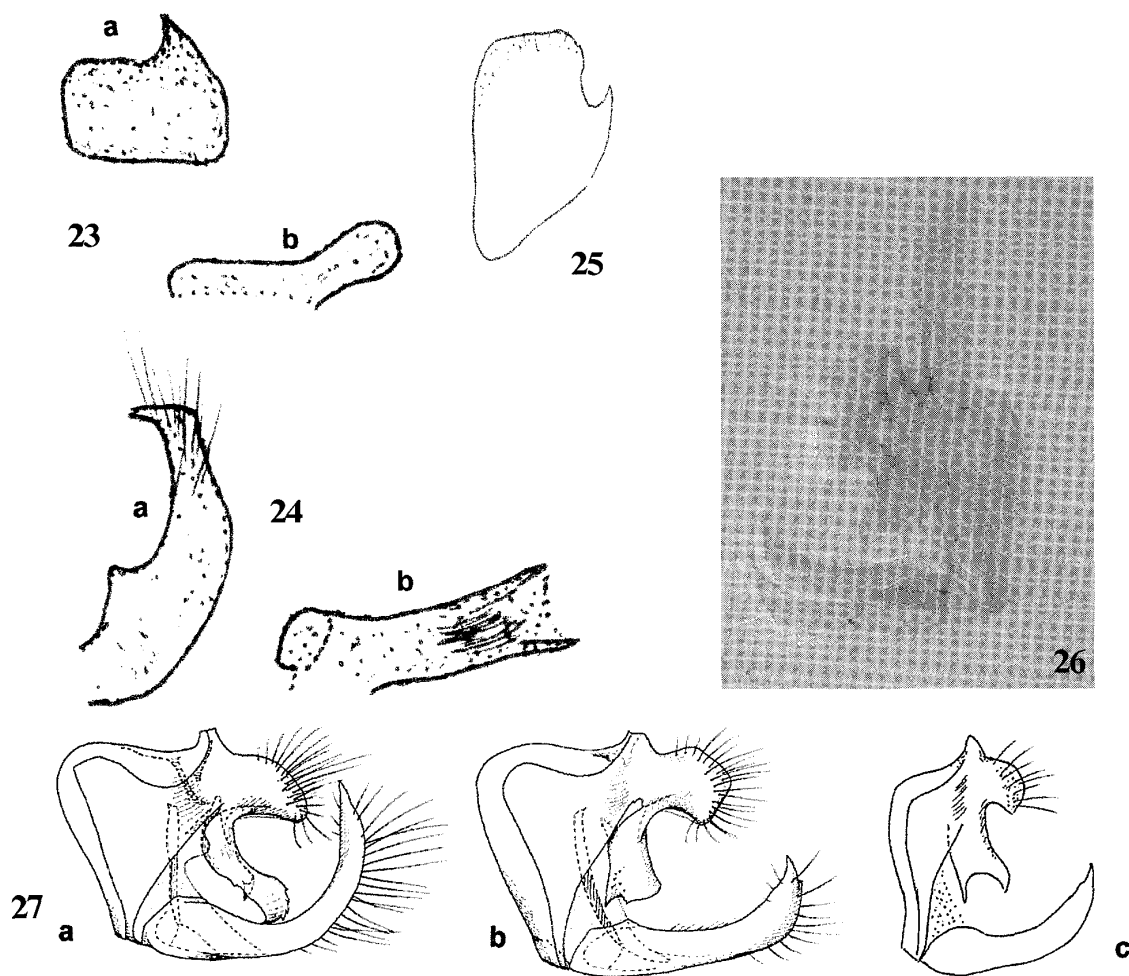
extreme western end of New Guinea.

If more material is discovered, and the small genitalic differences prove consistent, then this taxon may deserve specific status. I place it here tentatively as a subspecies of *ziska*.

***Philiris intensa ilioides* ssp. n.** (Figs 5c, 6c: ♂; Figs 5d, 6d: ♀; Figs 22b, 22c: ♂ genitalia)

Holotype ♂, labelled Buru 26-v-1921, Station 9, leg. L. J. Toxopeus; TYPE *ilioides* Cassidy. Paratype ♀, labelled Buru 21-v-1921, Station 9, leg. L. J. Toxopeus; PARATYPE *ilioides* Cassidy

Forewing length 13 mm in both sexes. Male upperside purple with generally narrow black borders less than 0.5 mm. The borders broadening towards the apex, on the forewing above vein 3 to a maximum of 2 mm, on the hindwing remaining narrow from the tornus until vein 6. The female upperside with broad costal and distal dark margins, expanding from 2 mm at the base of the costa to 5 mm at the apex. The forewing with a white discal patch covering



Figs 23–25. Male genitalia. 23. *Tajuria discalis floresica* Murayama (a: valva, b: aedeagus). 24. *Paraduba mastigti* sp. n. (a: valva, b: aedeagus). 25. *Jamides seminiger vanlithi* sp. n., valva.

Figs 26–27. Male genitalia of *Monodontides* spp. 26. *M. chapmani* sp. n., lateral view. 27a. *M. kolari* Ribbe. 27b. *M. ternatensis* Eliot & Kawazoë. 27c. *M. chapmani* sp. n.

the distal half of the cell and the basal halves of spaces 2 and 3, and with blue dusting in the base of the cell and below vein 2. The female hindwing dark brown with a dusting of blue scales in the cell and the basal halves of spaces 4 and 5. The underside of both sexes plain satin white, with a small black dot near the hind margin of the hindwing.

The male genitalia with the distal margin of the uncus broad. The valvae tapering from a broad triangular base to become relatively narrow at half their height, then produced to a fine apical point.

The adult male is superficially very similar to *P. ilias* which also occurs in Buru, but the apical black border on the upperside is slightly narrower. The female differs significantly from those of *ilias* from Buru by having the white discal patch on the forewing and reduced blue scaling in the hindwing. The male genitalia are very similar to those illustrated by Tite (1963) for *intensa* and *regina* which have been treated recently by Sands (1981) and Parsons (1999) as conspecific. The males of *intensa* are generally described as blue rather than purple, although Tite (1963) points out the differences in colour of males from the typical population in New Guinea and those of subspecies *butleri*, Grose-Smith & Kirby, from the North Moluccas. Although the new taxon has purple males, I treat it as the South Moluccan race of *intensa* because of the genitalic similarities.

The type location of the new subspecies, Station 9, is precisely described and located by Toxopeus (1924). It forms the surroundings of a lake in Central Buru at an elevation of approximately 800 m. All the specimens of *P. ilias* that I have seen from Buru were taken on Mt Mada, 900 m, in the west of the island.

***Tajuria discalis floresica* Murayama, 1983 (Figs 7-9: ♂; Fig. 23: ♂ genitalia)**

Murayama (1983) described *floresica* from two females. Takanami (1986) synonymised *floresica* with *Tajuria discalis* Fruhstorfer, 1897, without giving any detailed explanation for this action. This arrangement was followed by Morinaka and Shinkawa (1996), although they illustrated no new material from Flores. The Van Groenendael collection included four males and two females from Flores, together with an identical female from Sumba Island. The females closely match Murayama's description and one of the males was taken at the same time and place as one of the Flores females. This male and female conform closely on their underside patterning and I have no hesitation in concluding that they are conspecific. The two males are genitally identical and are conspecific. The male of *floresica* Murayama is therefore described and illustrated here for the first time.

Upperside forewing deep shining blue, but with a slight greenish tinge. The black forewing apical area smaller than nominotypical *discalis*, about half of vein 5, tapering to about 1 mm width mid-termen and continuing at this width around onto the dorsum. The forewing median black spot variable, sometimes absent. Upperside hind wing ground colour as in the forewing; submarginal spots in spaces 1b and 2 may be absent; reddish orange spot less than half the tornal lobe. Underside forewing as in *T. discalis discalis*. Hindwing with subtoral orange areas reduced; a vestigial black spot in space 3; the submarginal fuscous band evident in spaces 4 to 6.

The genitalia are consistent with *T. discalis discalis* as illustrated in Morinaka and Shinkawa (1996).

***Paraduba mastrigti* sp. n.** (Figs 10–11: ♂; Fig. 24: ♂ genitalia)

Holotype ♂, labelled IRIAN JAYA, Central Bergland, SUMATAMON *ca* 140°E Bulpul, 23/8–13/9 1990. H J G v Mastri; TYPE *mastrigti* Cassidy. Paratypes 3 ♂, same data as holotype, labelled PARATYPE *mastrigti* Cassidy, one in BMNH.

Forewing length 12 mm. Upperside dark smokey violet blue, with wide black borders on both wings. Forewing border 2 mm wide on termen, increasing to 4 mm at apex. Hindwing, the blue areas confined to the discal portions of spaces 1b, 2 and the cell. Underside ground colour light mid-brown, the rounded darker striae of plain colour and clearly outlined in white. The post-discal band virtually obsolete below vein 2.

The valva of the male genitalia having a fine in-curved apical point, as in *P. metriodes* (Bethune-Baker), but with a further point at the base of the inner curve. The aedeagus short and stout, as in *P. owgarra* Bethune-Baker, but squarer at the base and with more elongated dorsal and ventral processes at the tip.

This new species can be distinguished from *owgarra* externally by its broader dark margins, especially on the hindwing, and by its generally darker appearance on the upperside. Of the genitalic differences, the most distinct is the pointed process at the base of the inner curve of the valva, which is smoothly rounded in both *metriodes* and *owgarra*.

The type location is toward the eastern end of the central highlands of Irian Jaya, perhaps 120 km west of the Papua New Guinea border. It is named for the collector.

***Paraduba metriodes transvestita* ssp. n.** (Figs 12a, b: ♂)

Holotype ♂, labelled Wandammen Mts, 3–4000 ft, D. N. Guinea, Nov. 1914. A. C. & F. Pratt; Ann. & Mag. N. H., Ser 8, Vol 17, p 79 (Jan 1916); *Nacaduba proxima* Roths ♀ TYPE (J & T); Joicey Bequest Brit. Mus. 1934–120; Type N. At. (green); 1960–219 Gen. GET; *Paraduba metriodes transvestita* Cassidy. No. BMNH(E) # 220194. (Fig. 13). Genitalia preparation BM(NH) No. 19852, GET 1960–219 (examined).

The BMNH type collection includes a butterfly described by Joicey & Talbot (1916) as the female of Rothschild's *Nacaduba proxima* (= *P. metriodes*). This, in fact, male was examined by Tite, who also dissected the genitalia. He treated it as an aberration of *P. metriodes metriodes* Bethune-Baker. The specimen was also mentioned by Parsons (1999: 440) as being sufficiently distinct to suggest that it may belong to an undescribed species.

I have examined also the genitalia prepared by Tite and Eliot of the holotype and another specimen of *metriodes* and can find no significant differences between the three. I therefore treat the Wandammen specimen as conspecific with *metriodes* but describe it here as a new subspecies based on its external appearance and its separate montane location in the Western peninsulae of New Guinea.

The upperside of the forewing dark violet blue with black-brown costal and terminal borders. The border 3 mm wide at the apex, reducing to 1.5 mm at vein 4 and then of constant width to the dorsum. The upperside hindwing dark areas include the whole of space 1a and a terminal margin 1 mm wide from vein 1b to vein 6. Spaces 6 and 7 are all dark brown.

The underside pale mid-brown. The post-discal striae paler centrally and with fine white interior and exterior lines, except in space 1b which has just a vestigial dark stria with a single external white line.



Male genitalia show no significant variation from Tite (1963).

***Jamides seminiger vanlithi* ssp. n.** (Figs 14–15: ♂; Fig. 25: ♂ genitalia)

Holotype ♂, labelled NEDERLANDS INDIE, Kei Eilanden, KLEIN KEI, TEOER, 1–6. xi.1947, Pater Van Lith; TYPE *vanlithi* Cassidy.

Upperside dark violet blue. Forewing with the black border of even width for most of the termen and only 1 mm wide, but expanding to 2 mm at the apex. The border is therefore narrower than *tiglath* which is in turn much narrower than *seminiger*. Hindwing with the blue discal area small, as in *seminiger*. Underside pale brown as in *seminiger* with the banding fading out basally.

A valva from the male genitalia is shown in Fig. 25. Although the differences in male genitalia in the *bochus* group are slight, I have examined preparations held in the BMNH and consider this specimen to be conspecific with typical *seminiger*.

Hirowatari (1992) lists two subspecies of *J. seminiger* Grose-Smith, *porphyris* Holland, and *tiglath* Fruhstorfer. He gives the distribution for all 3 races as the Moluccas. The BMNH holds a series of *tiglath* from the Sula archipelago, which occupies the space between Sulawesi and Obi. This new subspecies thus enlarges the range for *seminiger* towards the south east.

The Van Groenendael collection includes two further males with the same collection data. They are confirmed as the same taxon by dissection but I exclude them from the type series because their external condition is very worn and the distinguishing characteristics are very difficult to make out.

***Monodontides chapmani* sp. n.** (Figs 16a, b: ♂; Figs 26, 27c: ♂ genitalia)

Holotype ♂, labelled Fakal, Buru, 1100 m, 28-x-1921, leg. Toxopeus; gen. prasp. No. 99; *Celastrina* (*Monodontides*) ♂ *chapmani* Tox. TYPE. (Fig. 17). Paratype, ♂, labelled Fat 'Kobon, Fakal, 1475 m, Boeroe, 8-iii-1922, leg. Toxopeus; genit. prep. No. 2; *Celastrina* (*Monodontides*) ♂ *chapmani* Tox. PARATYPE. Paratype ♂ labelled Wa' Temoon, Boeroe, 15-ii-1922, 800 m, leg. Toxopeus; genit. Prep. No. 4; *Celastrina* (*Monodontides*) ♂ *chapmani* Tox. PARATYPE.

Forewing length 14 mm. Upperside dull slate blue with the border a thread. Underside pale grey-brown. No central bar across the cell as in *M. ternatensis* Eliot & Kawazoe. Submarginal, post-discal and discal striae on both wings slightly darker than the ground colour and outwardly white-edged, except for the two spots in space 7 of the hindwing and two tornal spots on the hindwing which are black. Male genitalia as shown in Figs 26 and 27c.

The male genitalia show broad similarity to those of *M. kolari* (Ribbe) (Fig. 27a) and *ternatensis* (Fig. 27b). The main difference from both these species, however, is the vinculum hump, which is reduced to perhaps two-thirds of the size in the other two species. The valvae are similar to *ternatensis*, but are noticeably shorter than in *kolari*. In *chapmani* the pseudobranchia are straight and stout, as in *ternatensis*, but are swollen and pointed at the disto-ventral margin as well as having the proximo-ventral point of *ternatensis*. In *kolari* the pseudobranchia are slimmer and sinuate and are serrate at the disto-ventral margin. All three of Toxopeus' genitalia preparations were found in the Amsterdam Museum, but only that of the holotype remains with any clarity. The flat preparation precludes any detailed description of the phallus.



The characteristics of the male genitalia show this to be a good species. It is clear from the labelling that this status was recognized by Toxopeus, but he was unable to complete the description before his untimely death in a motorcycle accident in 1951.

In addition to the descriptions above, the following locations for known taxa are also noted.

***Logania marmorata*** Moore, 1884 (Figs 18–19)

1 ♂, labelled: **Sangir-Eiland**, coll. 1912, v. d. Bergh, *Allotinus marmoratus* Moore (Plate XI).

***Allotinus macassarensis*** (Holland, 1891)

Tobelo, **Halmaheira**, June 1936. Collector not stated [Mrs Van Diejen]. J. M. A. van Groenendael collection.

***Udara serangana*** Eliot & Kawazoé, 1983.

**Irian Jaya.** (1). Centraal Bergland, Langda ca 140°E, River Nongme. 17 Dec. 1989. (2). Star Mountains, Batimban, River Okkim. 11 Feb. 1991. (3) Daela, 6 Mar. 1985. All collected by H. J. G. van Mastrigt.

***Famegana alsulus*** (Herrich-Schäffer, 1869)

Pulau **Saleier** (Salajar) SW Sulawesi. Jan. 1939. Collector not stated [J. M. A. van Groenendael], van Groenendael collection.

## Acknowledgements

I am grateful to the Van Groenendael-Krijger Foundation for the grant of funds to facilitate this study of Lepidoptera in the Van Groenendael collection. Philip Ackery and Campbell Smith of the British Museum (Natural History) provided facilities and assistance during the necessary comparative work in London. Willem Hogenes of the Zoological Museum of the University of Amsterdam kindly gave much advice concerning the history and geography of the Van Groenendael collection.

## References

- Eliot, J. N., 1973. The higher classification of the Lycaenidae (Lepidoptera): a tentative arrangement. *Bull. Br. Mus. nat. Hist. (Ent.)* **28**: 373–505.
- Hirowatari, T., 1992. A generic classification of the tribe Polyommataini of the Oriental and Australian Regions. (Lepidoptera, Lycaenidae, Polyommatainae). *Bull. Univ. Osaka Prefect. (B)* **44**: 1–102.
- Joicey and Talbot, 1916
- Morinaka, S. and T. Shinkawa, 1996. A study of *Tajuria discalis* Fruhstorfer, 1897 (Lepidoptera, Lycaenidae) from Indonesia. I. *Trans. lepid. Soc. Japan* **47**: 83–92.
- Murayama, S., 1983. Notes on some new or unrecorded butterflies from Indonesia and Philippines. *New Ent. Ueda* **32** (2): 17–20.
- Parsons, M. J., 1999. *The Butterflies of Papua New Guinea, their Systematics and Biology*. 736 pp., 130 pls. Academic Press, London.
- Sands, D. P. A., 1981. New species of *Philiris* Röber (Lepidoptera: Lycaenidae) from Mainland New Guinea. *J. Aust. ent. Soc.* **20**: 89–96.
- , 1986. A revision of the genus *Hypochrysops* C. and R. Felder (Lepidoptera: Lycaenidae). *Entomograph* **7**: 1–116.
- Takanami, Y., 1986. A list of Lycaenidae from Flores in the Lesser Sunda Islands. *Gekkan-Mushi* (187): 7–14.
- Tite, G. E., 1963a. A revision of the genus *Candalides* and allied genera (Lepidoptera: Lycaenidae).

*Bull. Br. Mus. nat. Hist. (Ent.)* **14**: 199–259.

———, 1963b. A synonymic list of the genus *Nacaduba* and allied genera (Lepidoptera: Lycaenidae).

*Bull. Br. Mus. nat. Hist. (Ent.)* **13**: 69–116.

Toxopeus, L. J., 1924. A short description of the localities on the Island of Buru, in the Moluccas, where Zoological Collections were made during a Scientific Expedition in 1921 and 1922. *Tijdschr. Kon. ned. Aardrijksk. Genootschap* **41**.

## 摘 要

東南アジア島嶼のシジミチョウ科の新知見 (Alan C. Cassidy)

主としてアムステルダム大学動物学博物館に所蔵される標本に基いて、スラウエシからニューギニア地域のシジミチョウ科の新知見を報告した。本文で新種および新亜種として記載したタクサは次の通りである。

*Hypochrysops pyrodes* sp. n. (スラウエシ北部)

*Philiris ziska halmaheira* ssp. n. (ハルマヘラ)

*Philiris intensa ilioides* ssp. n. (ブル島)

*Paraduba mastrigti* sp. n. (イリアンジャヤ)

*Paraduba metriodes transvestita* ssp. n. (イリアンジャヤ)

*Jamides seminiger vanlithi* ssp. n. (ケイ島)

*Monodontides chapmani* sp. n. (ブル島)

本文ではフローレス産の *Tajuria discalis floresica* Murayama の♂を初めて図示、記載した。また、*Logania marmorata* Moore, *Allotinus macassarensis* (Holland), *Udara serangana* Eliot & Kawazoé, *Famegana alsulus* (Herrich-Schäffer) について新産地を記録した。

[文責: 吉本 浩/Hiroshi Yoshimoto]

(Accepted October 28, 2002)